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ABSTRACT

This report presents the results of a study in which one of the job analysis surveys for the Praxis Series: Professional Assessments for the Beginning Teacher was administered to teachers and teacher educators in California. The purpose of this special administration was to determine if the multidisciplinary content in the test form (Form 1 of Education in the Elementary School) was determined to be important for newly licensed California elementary school teachers. Responses were received from 125 teachers and 57 teacher educators. Frequency distributions across background information categories, mean importance ratings by relevant subgroup, and correlations of mean importance ratings within subgroups were determined. Forty-two knowledge statements (29% of the inventory) were rated below the designated cut point, but the remaining 103 were considered appropriate for the development of test specifications. Appendixes present the instrument and other forms used in the study and some supplemental information. (Contains six tables and five references.) (SLD)

THE PRAXIS SERIES
Professional Assessments for Beginning Teachers™

Beginning Teacher Knowledge of Education in the Elementary School: A Survey of California Educators

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Michael Rosenfeld

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Educational Testing Service

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Beginning Teacher Knowledge of Education in the Elementary School: A Survey of California Educators

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Executive Summary

This report presents the results of a study in which one of the job analysis surveys (Education in the Elementary School: Form 1) for The Praxis Series: Professional Assessments for Beginning Teachers™ was administered to teachers and teacher educators in California. The purpose of this special administration was to determine if the multidisciplinary content contained in Form 1 was judged to be important for California elementary school teachers. The results of the study may be used to support the development of the California Multi-Subject Assessments that will be required for elementary school teacher licensure.

An inventory of multidisciplinary knowledge elementary school teachers need to teach the elementary school curriculum was sent in a large-scale survey form to 499 teachers and 247 teacher educators in California. Respondents were asked to rate the individual knowledge statements using a 5-point importance scale. The inventory, Education in the Elementary School: Form 1, was originally developed for use in a national survey of elementary educators. The purpose of the California administration of the inventory was to determine a core of knowledge statements that relatively large numbers of educational professionals in California identified to be important to newly licensed (certified) elementary school teachers.

Three types of analyses were conducted: (1) frequency distributions across background information categories (e.g., sex, years of teaching experience, school level); (2) mean importance ratings by relevant subgroups; and (3) correlations of mean importance ratings within relevant subgroups. A cutpoint of 2.50 (midway between `Moderately Important` and `Important`) was set to differentiate between important knowledge and unimportant knowledge for purposes of test development. Knowledge statements that received a mean rating of less than 2.50 by any of the relevant subgroups of respondents (job category, sex, years of teaching experience, race/ethnicity) were identified. Test development staff were advised to use knowledge statements that fell above the 2.50 cutpoint for purposes of setting test specifications. However, if test development staff determined that the inclusion of particular statements that fell below 2.50 was compelling, then they were requested to provide a written rationale for the inclusion of the statements.

Forty-two knowledge statements proved problematic to one or more of the designated subgroups; that is, subgroups rated the statement below the cutpoint of 2.50. Thirteen of these statements were rated below 2.00. These 42 knowledge statements represent 29% of the inventory. Before they may be used in test specifications, these knowledge areas need written and compelling rationales from the test development committee. Without qualifications, 71% (n=103) of the knowledge areas may be used to develop test specifications.

The knowledge statements that were identified to be important by the surveyed teachers and teacher educators should be used as the foundation for the development of test specifications. It is reasonable to assume that, due to testing and psychometric constraints (e.g., time limits, ability to measure some content reliably), not all of the identified content

may be included on assessment measures. One source of information that may be used to guide the test development committee in their decision of what content to include on the assessment measures is the mean importance rating. Although a rank ordering of the content by mean importance rating is not implied, it is recommended that initial consideration be given to content that is well above the cutpoint and represents the appropriate breadth of content coverage.

Correlations for relevant subgroups were .91 and above, which suggests that there is substantial agreement among various subgroups of respondents with respect to the relative importance of the knowledge needed by newly licensed elementary school teachers.

Evidence was also provided in this study of how well each domain was covered by the specific knowledge statements and the overall importance of each knowledge domain. The results suggest that all of the domains were either adequately or well covered by the specific knowledge statements. Additionally, results indicate that all of the knowledge domains were judged to be important for the newly licensed elementary school teacher. Finally, suggestions were offered regarding the relative weights each domain should receive in test specifications for the California Multi-Subject Assessments, which will be required for elementary school teacher licensure in California.

List of Tables

Beginning Teacher Knowledge of Education in the Elementary School: A Survey of California Educators

Introduction

New developments in psychological and educational research, measurement, and technology, as well as recent national discussions about the preparedness and effectiveness of teachers, have spurred Educational Testing Service (ETS) to develop a new generation of teacher assessments (Dwyer, 1989). This new assessment system, called The Praxis Series: Professional Assessments for Beginning Teachers™, is designed to be used by states as part of the process they employ to license or certify their teachers. The new system will consist of three stages. Praxis I: Academic Skills Assessments are designed to be used by states to decide whether prospective teachers have the basic academic skills that serve as the foundation for teacher development and practice. Basic academic skills (e.g., reading, writing, mathematics) are judged to be important for teachers regardless of school level or subject matter taught (Rosenfeld & Tannenbaum, 1991). Praxis II: Subject Assessments measure knowledge of subject matter (e.g., biology, social studies, Spanish), general principles of teaching and learning, and content-specific pedagogy. Praxis III: Classroom Performance Assessments are performance-based measures of the beginning teacher's application of teaching knowledge and skills.

This report presents the results of a study in which one of the Praxis II job analysis surveys (Education in the Elementary School: Form 1) was administered to teachers and teacher educators in California. The purpose of this special administration was to determine if the multidisciplinary content contained in Form 1 was judged to be important for California elementary school teachers. The report describes the group of teachers and teacher educators who participated in the study, the statistical analyses conducted, the results of these analyses, and implications of the results for test development. The results of the study will be used to support the development of the California Multi-Subject Assessments, which will be required for elementary school teacher licensure in California.

Methods

Developing the Form 1 Inventory

Detailed information about the development and administration of the Education in the Elementary School: Form 1 inventory is provided in a separate report (see Reynolds, Tannenbaum, & Rosenfeld, in press). What follows is an overview of the job analysis process.

Form 1 of the Education in the Elementary School knowledge inventory was developed through an iterative process involving a national group of experts in the field of elementary education who had expertise not held by ETS staff. These practicing professionals included elementary school teachers, elementary school teacher educators, school administrators with responsibility for evaluating beginning elementary school teachers, and state department officials with responsibility for overseeing elementary school teacher credentialing.

Initially, ETS staff constructed a draft job analysis inventory of the knowledge needed by elementary school teachers in order to teach the content usually covered in the elementary school curriculum. This initial draft was sent to elementary school subject matter specialists for review. The draft was revised by ETS staff on the basis of the specialists' suggestions and then sent to an external review panel, which consisted of practicing professionals familiar with elementary school teaching. Telephone interviews were held with each member of the external review panel to solicit suggestions for revisions of the draft inventory. A national advisory committee, which included elementary school teachers, teacher educators, and school administrators, met to further review and refine the draft. The inventory of Education in the Elementary School: Form 1 was administered to a national group of elementary school teachers, teacher educators, and administrators. Analyses were conducted to identify the most important knowledge judged necessary for newly licensed elementary school teachers.

Final survey format. A copy of the Form 1 version of the inventory is found in Appendix A. (Form 2 described content-specific pedagogical knowledge and was not administered to the California group of educators.) The final survey consisted of five sections:

- Part I was the introduction, which described the inventory's purpose and gave directions for completing the inventory.
- Part II contained nine knowledge domains and their respective knowledge statements:
  - Knowledge of Elementary School Students;
  - Knowledge of Professional Issues;
  - Knowledge of Reading, Language Arts, and Literature;
  - Knowledge of Mathematics;
  - Knowledge of Social Studies;
  - Knowledge of Science;
  - Knowledge of Physical Education;
  - Knowledge of Health; and
  - Knowledge of Visual and Performing Arts.

  A total of 145 knowledge statements was included in Part II; there were also a content coverage question and an overall domain importance question for each knowledge domain, bringing the total number of questions to 163. The rating scale used for determining the importance of each knowledge statement for newly licensed elementary school teachers was also included in Part II.
- Part III asked respondents to list any important knowledge domains they believed were not included in the inventory.
- Part IV asked respondents to allocate 100 points across domains covered in the inventory to show how much emphasis they believed should be placed on each domain in the resulting test. These ratings are used to help assist test development committees in deciding how many test questions to put in each relevant knowledge domain.
- Part V asked respondents to complete background information questions (e.g., grade level taught, school setting, sex); responses to these questions were used to characterize the survey respondents and, where appropriate, to conduct subgroup analyses.

Evaluating the Domain for its Importance to Newly Licensed Elementary School Teachers

Once the content domain had been defined by the iterative process described above, it was evaluated in terms of its importance for competent job performance by the newly licensed teacher. The evaluation was carried out in two steps: 1) an administration of the

inventory to a large group of practicing professionals; and 2) an analysis of the data from this administration.

Administration of the inventory. The Form 1 knowledge inventory with an accompanying cover letter (Appendix B) and post-paid return envelope were mailed to groups of classroom teachers (n=499) and college faculty (n=247) in California[1]. The names of the teachers and teacher educators were drawn at random from mailing lists obtained through Market Data Retrieval Services (MDRS). MDRS is a survey research organization whose data base contains the names of over 90% of all the public school teachers and college faculty in the United States. Two weeks after the initial mailing, a follow-up postcard was sent requesting completion of the inventory (see Appendix C).

Data analysis. Three types of analyses were conducted: (1) frequencies of responses to the background information questions (e.g., age, number of years of teaching experience, ethnicity); (2) mean importance ratings by relevant subgroups of respondents (e.g., teachers, teacher educators, females); and (3) correlations of mean importance ratings within relevant subgroups.

Frequencies of responses to the background information questions were computed to describe the group of educators who responded to the survey. Four of these background questions, in particular, were important for purposes of analyzing the data of this study: job category; sex; race/ethnicity; and years of teaching experience. Job category (teacher and teacher educator) was analyzed separately to determine if these groups of respondents had similar perceptions regarding the important knowledge needed by the newly licensed elementary school teacher. Sex and race/ethnicity were considered relevant subgroups because they represent protected "classes" under Title VII of the Civil Rights Act of 1964. Years of teaching experience was included to determine if perceptions of importance differed by years of teaching experience. An analysis by relevant subgroups is an important part of the data analysis, for it is used to determine a core of knowledge that all relevant subgroups agree is important for the newly licensed (certified) elementary school teacher.

Mean importance ratings were computed for each statement by relevant subgroups that numbered 30 or more--this number is necessary to ensure an accurate estimate of the population mean (Walpole, 1974). The comparison of mean ratings provides an absolute measure of importance attributed to the knowledge statements by the various subgroups (e.g., teachers, teacher educators, females). Knowledge statements that meet or go beyond a critical mean value (discussed later in the report) by all relevant subgroups of respondents may be considered for inclusion in the development of test specifications. Means were also computed for responses to the content coverage and the recommendations for test content sections of the inventory. These mean analyses were computed using the aggregate of the respondents to provide overall indicators of relevance for consideration by test development staff.

Correlation coefficients were computed to determine the extent to which subgroups had similar patterns of mean importance ratings across the knowledge statements. Similar patterns reflect agreement in the relative importance of each knowledge statement. For example, the profile of the importance ratings of the 145 mean importance ratings for teachers was correlated with the profile of the 145 mean importance ratings for

[1]Some potential California teacher and teacher educator respondents were the same as those included in the national Education in the Elementary School survey. So that these educators would not receive two inventories, their names were omitted from the California study.

teacher educators. The greater the similarity between the two profiles, the closer the correlation coefficient value will be to 1.0.

Criteria for selecting content for purposes of test development. To aid the test development committee in determining which knowledge areas could be considered for purposes of defining the content domain for a test of multiple subjects and which knowledge areas should not be included, a mean rating of 2.50 was chosen as the cutpoint. The mean of 2.50 is the midpoint between *Moderately Important* and *Important* on the 5-point rating scale and is consistent with the intent of content validity, which is to include important knowledge and exclude unimportant knowledge from the assessment measures. The rating scale is shown in Table 1.

Table 1. Rating Scale Used in the Form 1 Inventory

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?	
(0)	Not important
(1)	Slightly important
(2)	Moderately important
(3)	Important
(4)	Very important

Members of the test development committee were advised to consider knowledge areas that received a mean importance rating of 2.50 or higher as eligible for inclusion in the test specifications; knowledge areas that fell below the 2.50 cutpoint were not to be considered for inclusion. If the committee believed that a knowledge area that did not meet the cutpoint should be included in the specifications, they were requested to provide a compelling and documented rationale for its inclusion.

Results

Response Rate

Of the 746 Form 1 surveys mailed out, six were returned not completed due to a variety of reasons (e.g., incorrect address, individual had retired, individual declined to participate). Of the remaining 740, 231 were completed and returned. Of these 231 surveys, 182 were analyzed; those that were not analyzed had been returned after the due date (n=13) or the respondents did not meet the criteria of being a teacher/full-time substitute or teacher educator (n=36). The overall response rate (including nonusable surveys) was 33% (n=243).

Demographic Characteristics of Respondents

Appendix D shows the distribution of respondents across all the background information categories. The distribution of respondents according to job category was: 69% teachers and 31% college faculty. Seventy-four percent were female; 26% were male. The majority of the respondents were White (86%). Eleven percent had five or fewer years of teaching experience; 40% had taught from 6 to 20 years; and 49% had taught 21 years or more.

Mean Importance Ratings for Knowledge Statements

The mean importance rating on each knowledge statement for all respondents, broken down by job category (teachers, teacher educators) is found in Appendix E. Knowledge statements rated less than 2.50 are identified in boldface on this table. Mean importance ratings were also computed for each of the relevant subgroups. Appendix F displays the knowledge statements that did not meet the 2.50 cutpoint for relevant subgroups of respondents.

Of the 145 knowledge statements on the inventory, 42 statements (29%) fell below the 2.50 cutpoint for one or more relevant subgroups. Thirty statements were rated below 2.50 by teachers and/or teacher educators; twelve additional statements were rated below 2.50 by the analyses of other relevant subgroups (e.g., male, 0-10 years of teaching experience). Table 2 shows the total number and percent of statements that fell below 2.50 in each domain. For 13 knowledge statements, one or more subgroups gave ratings of less than 2.00 (*Moderately Important*).

Table 2. Number and Percent of Statements below 2.50 by Domain

KNOWLEDGE DOMAIN	NUMBER OF STATEMENTS IN THE DOMAIN	STATEMENTS RATED BELOW 2.50	
		number	percent of the domain
Elementary School Students	15	5	33%
Professional Issues	5	3	60%
Reading, Language Arts, and Literature	16	1	6%
Mathematics	24	2	8%
Social Studies	30	14	47%
Science	27	3	11%
Physical Education	2	0	0%
Health	11	0	0%
Visual and Performing Arts	15	14	93%

Correlations of the Mean Importance Ratings

Correlation coefficients were computed to test the extent of differences among relevant subgroups of respondents. The correlation between teachers (n=125) and teacher educators (n=57) was .91. The correlation between females (n=135) and males (n=47) was .94. The correlation between teachers with 10 or fewer years of teaching experience (n=39) and those with eleven or more years (n=141) was .96. All of the correlations were in the .90s, indicating a high level of agreement in perceived relative importance of the knowledge statements among the various subgroups. Correlations were not computed for respondents by race/ethnicity because there were fewer than 30 respondents in the non-White ethnic groups.

Together, the results of the mean and correlational analyses suggest strong support for a core of important knowledge that is relevant for the diversity of elementary school candidates who may take the test of multiple subjects. As discussed earlier, the test development committee is advised to consider for inclusion in the development of test

specifications only those knowledge statements that received a mean importance rating of 2.50 or greater. To include knowledge statements that fall below the cutpoint, the committee is requested to provide compelling written justification.

Evaluation of the Content Domain

Respondents were asked two questions on the inventory to determine the extent to which the inventory covered knowledge judged to be important for the newly licensed elementary school teacher: a question on content coverage, and a question on the overall importance of each knowledge domain.

Content coverage. Survey respondents were asked to indicate, using a 5-point rating scale, how well each major knowledge domain was covered by the specific knowledge statements. The scale values ranged from a low of 1 (*Very Poorly*) to a high of 5 (*Very Well*); the midpoint of the scale was a value of 3 (*Adequately*). Table 3 shows the means and standard deviations of these ratings for respondents by job category. All the mean ratings were above 3.50 except for the rating teacher educators gave to the section on Knowledge of Physical Education (3.29). Most of the sections received ratings above 4.00. This analysis indicates that respondents judged the knowledge domains to be well-covered.

Table 3. Content Coverage of Knowledge Domains

KNOWLEDGE DOMAINS	TEACHER n=125		TEACHER EDUCATOR n=57	
	mean	standard deviation	mean	standard deviation
Elementary School Students	3.98	.74	4.00	.73
Professional Issues	3.73	.72	3.61	1.00
Reading, Language Arts, and Literature	4.34	.70	4.21	.83
Mathematics	4.38	.69	4.20	.76
Social Studies	4.09	.80	4.04	.88
Science	4.23	.70	4.20	.81
Physical Education	3.60	.88	3.29	.98
Health	4.22	.74	3.96	.85
Visual and Performing Arts	4.03	.80	4.09	.81

Mean ratings for the overall importance of the knowledge domains. Respondents were asked to give ratings for the overall importance of each knowledge domain. The scale values for this question ranged from a low of 0 (*Not Important*) to a high of 4 (*Very Important*); the midpoint of the scale was a value of 2 (*Moderately Important*). As seen in Table 4, when the means are rounded, all of the domains were rated as being important for newly licensed elementary school teachers by teachers and teacher educators. The domains rated as being very important by teachers and teacher educators were Knowledge of Reading, Language Arts, and Literature; Knowledge of Mathematics; and Knowledge of Health.

Table 4. Mean Importance Ratings of Knowledge Domains

KNOWLEDGE DOMAIN	TEACHERS n=125		TEACHER EDUCATORS n=57	
	mean	standard deviation	mean	standard deviation
Elementary School Students	3.21	.68	3.55	.57
Professional Issues	2.78	.74	2.89	.75
Reading, Language Arts, and Literature	3.63	.57	3.72	.49
Mathematics	3.50	.65	3.64	.56
Social Studies	3.04	.80	3.40	.67
Science	3.20	.71	3.42	.61
Physical Education	3.17	.75	2.58	.88
Health	3.51	.66	3.30	.70
Visual and Performing Arts	2.55	.93	2.73	.73

Mean Percentage Weights for Test Content Emphasis: Aggregate of Survey Respondents

In addition to being asked to rate each knowledge statement, respondents were asked to indicate how many test questions (out of 100) should be included from each of the knowledge domains. The mean values were converted into percentages. Table 5 shows the mean percentage weights allocated by each job category of respondents and the corresponding standard deviation. Overall, Knowledge of Reading, Language Arts, and Literature received the most weight (17.79%). Knowledge of Elementary School Students (15.10%) and Knowledge of Mathematics (15.49%) were very similar in allocated percentages, as were Knowledge of Social Studies (11.81%) and Knowledge of Science (12.17%). Knowledge of Visual and Performing Arts (6.28%) and Knowledge of Physical Education (6.38%) received the lowest number of percentage points. The test development committee should take these weights into consideration as they determine how much emphasis the knowledge domains should receive in the test specifications.

Table 5. Mean of Domains Recommended for Inclusion in the Test[2]

KNOWLEDGE DOMAIN	TEACHERS n=125		TEACHER EDUCATORS n=57		OVERALL MEAN	
	mean	standard deviation	mean	standard deviation	mean	standard deviation
Elementary School Students	14.87	7.18	15.54	7.84	15.10	7.40
Professional Issues	7.32	4.93	7.33	4.28	7.32	4.70
Reading, Language Arts, and Literature	18.41	5.80	16.62	4.68	17.79	5.49
Mathematics	15.62	4.99	15.25	4.22	15.49	4.73
Social Studies	10.91	3.36	13.50	3.70	11.81	3.69
Science	11.78	3.95	12.90	3.44	12.17	3.81
Physical Education	7.06	3.04	5.10	2.53	6.38	3.01
Health	8.92	3.79	7.50	3.42	8.43	3.72
Visual and Performing Arts	6.08	2.97	6.65	3.30	6.28	3.09

Summary

This report describes a study conducted to provide California test development committees with information regarding the most important knowledge domains needed by newly licensed (certified) California elementary school teachers. The results of the study may be used to support the development of the California Multi-Subject Assessments that will be required for elementary school teacher licensure.

An inventory of knowledge elementary school teachers need to teach the elementary school curriculum (Education in the Elementary School: Form 1) was constructed through an iterative process by a national group of teachers, teacher educators, and administrators familiar with elementary school teaching. The knowledge inventory was then sent in survey form to 499 teachers and 247 teacher educators in California. Respondents were asked to rate the individual knowledge statements using a 5-point importance scale.

Three types of analyses were conducted: (1) frequency distributions across background information categories (e.g., sex, years of teaching experience, school level); (2) mean importance ratings by relevant subgroups; and (3) correlations of mean importance ratings within relevant subgroups. A cutpoint of 2.50 (midway between *Moderately Important* and *Important*) was set to identify important knowledge from unimportant knowledge for purposes of test development. Knowledge statements that received a mean rating of less than 2.50 by any of the relevant subgroups of respondents (job category, sex, years of teaching experience, race/ethnicity) were identified. Test development staff were advised to use knowledge statements that were rated above the 2.50 cutpoint for purposes of setting test specifications. However, if test development staff determined that the inclusion of particular knowledge statements that fell below 2.50 was

[2]Rounded, the sum of percentages may not equal 100 because some respondents wrote in totals that were greater than or less than 100.

necessary, then they were requested to provide a written and compelling rationale for the inclusion of the statements.

Forty-two knowledge statements proved problematic to one or more of the designated subgroups; that is, one or more subgroups rated the statement below the cutpoint of 2.50. These 42 knowledge statements are shown in Table 6. Before they may be used in test specifications, these knowledge areas need written rationales from the test development committee. Without qualifications, 71% (n=103) of the knowledge areas may be used to develop test specifications. Because not all of the identified content can be included in the licensure test, it is suggested that the test development committee use those knowledge areas that received the highest mean importance ratings above 2.50 that will ensure appropriate breadth of content coverage on the new assessment. Should the test development committee find it necessary to use content rated below the cutpoint, then they should provide a written and compelling rationale for the use of such content.

Correlations for relevant subgroups were .91 and above, which suggests that there is substantial agreement among various subgroups of respondents with respect to the relative importance of the knowledge needed by newly licensed elementary school teachers.

Evidence was also provided in this study of how well each domain was covered by the specific knowledge statements and the overall importance of each knowledge domain. The results suggest that all of the domains were either adequately or well covered by the specific knowledge statements. Additionally, results indicate that all of the knowledge domains were judged to be important for the newly licensed elementary school teacher. Finally, suggestions were offered regarding the relative weights each domain should receive in test specifications for a multi-subjects assessment required for elementary school teacher licensure in California.

Table 6. Knowledge Statements that Failed to Meet the 2.50 Cutpoint

DOMAIN A: KNOWLEDGE OF ELEMENTARY STUDENTS	
11	theories of language development
12	early language acquisition's affect on classroom language
13	stages of language acquisition and development
14	second language learning
15	principles of linguistics
DOMAIN B: KNOWLEDGE OF PROFESSIONAL ISSUES	
18	major trends in curriculum theory
19	professional and scholarly organizations
20	professional and scholarly literature
DOMAIN C: KNOWLEDGE OF READING, LANGUAGE ARTS, AND LITERATURE	
34	adult literature
DOMAIN D: KNOWLEDGE OF MATHEMATICS	
62	statistics and probability
66	historical, cultural, and ongoing development of math principles
DOMAIN E: KNOWLEDGE OF SOCIAL STUDIES	
76	interregional relationships over time
79	traditional political institutions
83	market as distribution and information system
84	individual and the market
85	effects of economic and historical forces on humans and nature
86	government and the market
87	economic systems
90	belief systems in various cultures
91	socialization and acculturation
94	impact of cultural evolution on different civilizations
95	physical anthropology
96	logic
97	ethics
98	philosophical traditions in diverse cultures
DOMAIN F: KNOWLEDGE OF SCIENCE	
116	origins of life
120	reproduction and nurturing of the young
127	ethics in science
DOMAIN I: KNOWLEDGE OF VISUAL AND PERFORMING ARTS	
147	basic elements of music
148	genres of music
149	various music media
150	basic elements of visual arts
151	genres of visual arts
152	various visual arts media
153	basic elements of dance
154	genres of dance
155	basic elements and components of drama
156	genres of drama
157	elements common to the arts
159	affective influence of a work of art on the viewer, listener, perceiver
160	works of music, dance, drama, and the visual arts across cultures
161	works of music, dance, drama, and the visual arts, from various periods of history

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Appendix A

Inventory of Education in the Elementary School: Form 1

JOB ANALYSIS INVENTORY

OF

EDUCATION

IN THE

ELEMENTARY SCHOOL

FORM 1

By

Educational Testing Service
Princeton, New Jersey

PART I -- INTRODUCTION

Educational Testing Service (ETS) is developing a new generation of assessments for the purpose of licensing (certifying) teachers. The inventory that follows is part of our development effort and is designed to gather information concerning the entry-level elementary school teacher's job. It was developed by teachers, college faculty, and state department of education officials, along with ETS staff.

The inventory asks you to respond to a list of knowledge statements and to rate each statement as to its importance for a newly licensed (certified) teacher. Please do not relate each statement to your own job but rather to what you believe an entry-level elementary school teacher should know.

The information you provide will guide the development of the Education in the Elementary School examination offered in the new generation of teacher assessments. It is expected that the new examination will differ from the current examination in both content and design. In addition to the development of a new examination, this study will also contribute to our understanding of education as a profession. We expect the results of the study to be widely disseminated and to have ramifications for teacher preparation.

The inventory has been mailed to a sample of approximately 1600 professionals. The value of the results is directly related to the number of individuals who return their completed inventories. Because you represent a large number of professionals, your responses are extremely important. Please take the time to complete and return the inventory. Thank you.

PART II -- INVENTORY OF KNOWLEDGE OF EDUCATION IN THE ELEMENTARY SCHOOL

This section focuses on the knowledge of students, professional issues, and subject matter that elementary school teachers draw on as they perform their work. On the following pages you will find nine broad domains:

A. **Knowledge of Elementary School Students**

B. **Knowledge of Professional Issues**

C. **Knowledge of Reading, Language Arts, and Literature**

D. **Knowledge of Mathematics**

E. **Knowledge of Social Studies**

F. **Knowledge of Science**

G. **Knowledge of Physical Education**

H. **Knowledge of Health**

I. **Knowledge of Visual and Performing Arts**

Within each domain is a list of topics. For each topic you will be asked to make your judgment using the following scale:

> How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?
>
> (0) Not important
> (1) Slightly important
> (2) Moderately important
> (3) Important
> (4) Very important

To familiarize yourself with the domains and topics, you may wish to glance through the inventory before making your rating judgments. Please note that many topics are followed by examples (e.g.) or clarifying statements (i.e.). These items are included in parentheses in order to assist you; they are not meant to be read as sample test items.

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

A. KNOWLEDGE OF ELEMENTARY SCHOOL STUDENTS — IMPORTANCE

The following statements refer to knowledge of human growth, development, and learning of all students that an elementary school teacher needs to know in order to teach children of elementary school age.

Understand the physical, psychosocial, and cognitive factors that influence growth, development, and learning

1. Biological (e.g., genetic maturation) 0 1 2 3 4
2. Familial (e.g., parental child-rearing attitudes, sibling relationships, birth order, single-parent families, socio-economic level) 0 1 2 3 4
3. Nutritional/hygienic (e.g., the effects of diet and eating behaviors, sleep patterns, exercise, immunization) 0 1 2 3 4
4. Cultural (e.g., gender roles; the effects of the dominant cultural values; the effects of regional, ethnic, and religious influences; the role of primary transmitters of culture) 0 1 2 3 4
5. Educational context (e.g., student, parent, and teacher expectations; school climate; out of school context; community impact) 0 1 2 3 4
6. Students' learning styles (e.g., visual, auditory, field dependent/independent kinesthetic) 0 1 2 3 4

Understand theories of cognitive, physical, and psychosocial development from prenatal through adolescence stages

7. Cognitive development (e.g., logical reasoning, perceptual, causal reasoning, information processing, constructivism) 0 1 2 3 4
8. Physical development (e.g., gross and fine motor development, visual discrimination, auditory discrimination, kinesiology) 0 1 2 3 4
9. Affective development (e.g., self-concept and self-esteem, motivation to learn) 0 1 2 3 4
10. Social development (e.g., social conventions and social judgments, play behavior) 0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

A. KNOWLEDGE OF ELEMENTARY SCHOOL STUDENTS (cont.) — IMPORTANCE

Understand the nature of language development from prenatal through adolescence stages

11. Theories of language development (e.g., Bruner, Vygotsky, Skinner, Chomsky) 0 1 2 3 4
12. How early language acquisition can affect the development of language in the classroom 0 1 2 3 4
13. Stages of language acquisition and development (e.g., phonology, syntax, semantics, conventions of print, conventions of language) 0 1 2 3 4
14. Second language learning (i.e., the cross-cultural nature of second language learning and the importance and impact of dialects and familial language patterns) 0 1 2 3 4
15. Principles of linguistics, psycholinguistics, sociolinguistics (e.g., various language structures, effects of prior knowledge, standard/nonstandard dialects) 0 1 2 3 4

16. **Overall evaluation of the importance of Knowledge of Elementary School Students?** 0 1 2 3 4

17. How well do the statements in section A cover the important aspects of Knowledge of Elementary School Students?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

B. KNOWLEDGE OF PROFESSIONAL ISSUES — IMPORTANCE

Understand current educational practices in the United States as affected by

18. Major trends of curriculum theory 0 1 2 3 4

19. Professional and scholarly organizations for elementary school teachers (e.g., IRA, local reading or math councils, NCTM, NAST, ACEI, NABE) 0 1 2 3 4

20. Professional and scholarly literature relevant to elementary school teaching (e.g., *The Reading Teacher, The Arithmetic Teacher, Childhood Education*) 0 1 2 3 4

21. Understand the effects of one's teaching style on learning and instruction (e.g., expectations, choice of materials, classroom management) 0 1 2 3 4

22. Understand the variety of parent-school collaborations (e.g., parents as partners in learning, as advocates, as volunteers) 0 1 2 3 4

23. **Overall evaluation of the importance of Knowledge of Professional Issues?** 0 1 2 3 4

24. How well do the statements in section B cover the important aspects of Knowledge of Professional Issues?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

The following sections (C-I) refer to the subject matter that an elementary school teacher needs to know in order to teach content areas most often covered in an elementary school program. NOTE: The examples given are not all inclusive.

C. KNOWLEDGE OF READING, LANGUAGE ARTS, AND LITERATURE	IMPORTANCE
25. Conventions of language (e.g., spelling, capitalization, punctuation, handwriting)	0 1 2 3 4
26. Language structure (e.g., parts of speech, verb tenses, plurals, figurative language, sentence types)	0 1 2 3 4
27. Word recognition strategies (e.g., sight vocabulary, phonic analysis, structural analysis)	0 1 2 3 4
28. Comprehension strategies (e.g., text structure, vocabulary, and metacognitive strategies; activating prior knowledge)	0 1 2 3 4
29. Text structure (e.g., expository text, narrative text, organizational patterns, vocabulary and concept load)	0 1 2 3 4
30. Language usage (e.g., interpretive and communicative aspects, requesting, questioning, nonverbal communication)	0 1 2 3 4
31. Library skills (e.g., catalogue and search systems, reference materials)	0 1 2 3 4
32. Study skills (e.g., note taking, organizing materials and time, planning, outlining, dictionary usage, issues in reading in the content areas)	0 1 2 3 4
33. Children's literature (e.g., the range of nonfiction and fiction, poetry, drama, myths, multicultural literature, Caldecott and Newbery award winners)	0 1 2 3 4
34. Adult literature (e.g., various genres of fiction and nonfiction, Western and non-Western authors)	0 1 2 3 4
35. Functional literacy (e.g., documents, advertisements, newspapers, magazines)	0 1 2 3 4
36. Graphic literacy (e.g., illustrations, photographs, charts, media)	0 1 2 3 4
37. Oral communication and presentation skills (e.g., voice modulation, public speaking, storytelling, leading group discussions)	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

C. KNOWLEDGE OF READING, LANGUAGE ARTS, AND LITERATURE (cont.) — IMPORTANCE

38. Creative dramatics (e.g., spontaneous dramatics, role playing, puppetry, play production) 0 1 2 3 4

39. Composing processes (i.e., prewriting/planning, drafting, revising, editing, publishing) 0 1 2 3 4

40. Types of writing (e.g., expressive, personal, informational, poetic, imaginative) 0 1 2 3 4

41. **Overall evaluation of the importance of Knowledge of Reading, Language Arts, and Literature?** 0 1 2 3 4

42. How well do the statements in section C cover the important aspects of Knowledge of Reading, Language Arts, and Literature?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

D. KNOWLEDGE OF MATHEMATICS — IMPORTANCE

Mathematical concepts and how to use them

43. Prenumeration (e.g., classification, patterns, sets) 0 1 2 3 4

44. Numeration (e.g., place value, cardinal and ordinal numbers, number bases) 0 1 2 3 4

45. Number theory (e.g., prime, composite, greatest common factor) 0 1 2 3 4

46. Patterns and functions 0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

D. KNOWLEDGE OF MATHEMATICS (cont.)		IMPORTANCE
47.	Number sense (i.e., number meaning and use, operation sense)	0 1 2 3 4
48.	Techniques for computational estimation	0 1 2 3 4
49.	Mental mathematics	0 1 2 3 4
50.	Calculator	0 1 2 3 4
51.	Computer	0 1 2 3 4
52.	Paper/pencil computation	0 1 2 3 4
53.	Whole numbers	0 1 2 3 4
54.	Rational numbers (fractions, decimals)	0 1 2 3 4
55.	Percents	0 1 2 3 4
56.	Inequalities	0 1 2 3 4
57.	Integers	0 1 2 3 4
58.	Geometry and spatial sense (e.g., area and perimeter, square and cube, symmetry, congruence)	0 1 2 3 4
59.	Measurements to describe and compare phenomena (e.g., length, capacity, weight, area, volume, time, temperature, angle measure, perimeter, mass)	0 1 2 3 4
60.	Organizing and interpreting data (e.g., tables, charts, graphs)	0 1 2 3 4
61.	Algebraic methods to solve a variety of real world and other mathematical problems	0 1 2 3 4
62.	Statistics and probability (e.g., measures of central tendency, dispersion, prediction)	0 1 2 3 4
Mathematical reasoning		
63.	Methods of using mathematics to make sense of the world (e g., solving real world problems, seeking patterns, organizing data in useful ways)	0 1 2 3 4
64.	Methods of mathematical investigation (e.g., collaborating with others, applying a variety of strategies and pathways, multiple solutions)	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

D. KNOWLEDGE OF MATHEMATICS (cont.) — IMPORTANCE

65. Strategies for problem solving (e.g., acting it out, making a list, drawing a picture, guess and check) 0 1 2 3 4

66. Historical, cultural, and ongoing development of major mathematical concepts and principles 0 1 2 3 4

67. **Overall evaluation of the importance of Knowledge of Mathematics** . . . 0 1 2 3 4

68. How well do the statements in section D cover the important aspects of Knowledge of Mathematics?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

E. KNOWLEDGE OF SOCIAL STUDIES — IMPORTANCE

69. Methods of inquiry and validation of evidence in social studies (e.g., map skills, graphs, statistical information, reports, simulations, primary sources) 0 1 2 3 4

Major concepts in geography

70. Interdependence of humans and physical environment (e.g., climate, landforms, vegetation) 0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

E. KNOWLEDGE OF SOCIAL STUDIES (cont.)	IMPORTANCE
71. World cultures	0 1 2 3 4
72. National territories (e.g., political and physical boundaries)	0 1 2 3 4
Major concepts in history	
73. Chronology, sequence, change	0 1 2 3 4
74. Major events and movements in United States history up to the present	0 1 2 3 4
75. Major events and movements in global history (e.g., Renaissance, population migration, space exploration, independence movements)	0 1 2 3 4
76. Interregional relationships over time (e.g., economic/historical effects of colonialism, Common Market, OPEC)	0 1 2 3 4
Major concepts in political science	
77. Nature and purpose of government	0 1 2 3 4
78. Forms of government (e.g., democracy, oligarchy, monarchy)	0 1 2 3 4
79. Traditional political institutions among diverse cultural groups (e.g., matriarchy, chieftainship)	0 1 2 3 4
80. United States Constitution	0 1 2 3 4
81. Rights and responsibilities of citizens (e.g., voting, naturalization process, civil rights)	0 1 2 3 4
82. Relations among nations (e.g., alliances, wars, treaties, the United Nations)	0 1 2 3 4
Major concepts in economics	
83. Market as distribution and information system (e.g., demand, supply, production, inflation, international relations)	0 1 2 3 4
84. Individual and the market (e.g., employment, labor movement, composition and distribution of income and allocation of resources)	0 1 2 3 4
85. Effects of economic and historical forces on human populations and natural resources	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

E. KNOWLEDGE OF SOCIAL STUDIES (cont.)		IMPORTANCE
86.	Government and the market	0 1 2 3 4
87.	Economic systems (e.g., capitalism, socialism)	0 1 2 3 4
Major concepts in anthropology, psychology, and sociology		
88.	Culture	0 1 2 3 4
89.	World view (e.g., self, other, relationship between self and other, time, space, causality)	0 1 2 3 4
90.	Belief systems in various cultures (e.g., major organized religions and traditional practices, child-rearing beliefs)	0 1 2 3 4
91.	Socialization and acculturation	0 1 2 3 4
92.	Political, social, and economic conditions of ethnic groups in the United States and worldwide	0 1 2 3 4
93.	Cross-cultural phenomena (e.g., communication, racism, sexism)	0 1 2 3 4
94.	Impact of cultural evolution on different civilizations	0 1 2 3 4
95.	Physical anthropology (e.g., human origins and variations)	0 1 2 3 4
Major concepts in philosophy		
96.	Logic	0 1 2 3 4
97.	Ethics	0 1 2 3 4
98.	Philosophical traditions in diverse cultures (e.g., idealism, pragmatism, yoga, Vedic philosophy, Zen)	0 1 2 3 4

How <u>important</u> is it for a <u>newly licensed (certified)</u> elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

E. KNOWLEDGE OF SOCIAL STUDIES (cont.) — IMPORTANCE

99. **Overall evaluation of the importance of Knowledge of Social Studies?** . . 0 1 2 3 4

100. How well do the statements in section E cover the important aspects of Knowledge of Social Studies?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

F. KNOWLEDGE OF SCIENCE — IMPORTANCE

Basic concepts in physical science

101. Molecules, atoms, and chemical change 0 1 2 3 4
102. Physical change 0 1 2 3 4
103. Heat and temperature 0 1 2 3 4
104. Sound 0 1 2 3 4
105. Light 0 1 2 3 4
106. Energy sources 0 1 2 3 4
107. Transformation of energy 0 1 2 3 4
108. Machines 0 1 2 3 4
109. Magnetism and electricity 0 1 2 3 4
110. Flight and space travel 0 1 2 3 4

Basic concepts in earth science

111. Surface features of the earth and changes in these features (e.g., erosion, mountain building) 0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

F. KNOWLEDGE OF SCIENCE (cont.)	IMPORTANCE
112. Air and weather	0 1 2 3 4
113. Sun and planets	0 1 2 3 4
114. Stars and the universe	0 1 2 3 4
115. History of the earth, solar system, and universe	0 1 2 3 4
Basic concepts in life science and ecology (plants and animals)	
116. Origins of life	0 1 2 3 4
117. Classification systems	0 1 2 3 4
118. Human anatomy and physiology	0 1 2 3 4
119. Relationships of structure and functions	0 1 2 3 4
120. Reproduction and nurturing of the young	0 1 2 3 4
121. Habitat and climate, including adaptation and population dynamics	0 1 2 3 4
122. Food chains and interdependence	0 1 2 3 4
Inquiry in science	
123. Scientific processes and problem solving (e.g., kinds of data gathering, controlling variables, reasoning, organization of information, application of the findings, communication)	0 1 2 3 4
124. Methods of inquiry (e.g., validation of evidence, seeing patterns, making inferences, drawing conclusions, generalizations)	0 1 2 3 4
125. Unifying themes/concepts in science (e.g., change over time, scale and structure, energy)	0 1 2 3 4
126. The impact of science and technology on society (e.g., bio-engineering, pollution)	0 1 2 3 4
127. Ethics in science (e.g., animal experimentation, human-subject research, genetic engineering)	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

F. KNOWLEDGE OF SCIENCE (cont.)

128. **Overall evaluation of the importance of Knowledge of Science?** 0 1 2 3 4

129. How well do the statements in section F cover the important aspects of Knowledge of Science?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

G. KNOWLEDGE OF PHYSICAL EDUCATION — IMPORTANCE

130. Basic elements and components of physical education (e.g., movement experiences, open/limited space activities, sports skills and rules, safety, cooperation and competition between teams and individuals) 0 1 2 3 4

131. Progression of motor learning (e.g., simple to complex skill development) 0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

G. KNOWLEDGE OF PHYSICAL EDUCATION		IMPORTANCE
132.	**Overall evaluation of the importance of Knowledge of Physical Education?**	0 1 2 3 4

133. How well do the statements in section G cover the important aspects of Knowledge of Physical Education?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

H. KNOWLEDGE OF HEALTH		IMPORTANCE
134.	Effects of physical, emotional, and social health on learning	0 1 2 3 4
135.	Effects of environmental factors on the health of individuals (e.g., pollution, lead-based paint, asbestos)	0 1 2 3 4
136.	Basic scientific information about a variety of health content areas (e.g., substance abuse, sex education, AIDS)	0 1 2 3 4
137.	Basic information about personal care (e.g., nutrition, dental health, hygiene)	0 1 2 3 4
138.	Characteristics of the healthy person and signs and symptoms of unhealthy conditions	0 1 2 3 4
139.	Signs and symptoms of child abuse	0 1 2 3 4
140.	Health personnel: their functions, responsibilities, and usefulness to the teacher	0 1 2 3 4
141.	Laws, policies, and procedures in schools regarding health matters (e.g., emergencies, accidents, disease control, child abuse)	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

H. KNOWLEDGE OF HEALTH (cont.)		IMPORTANCE
142.	Basic emergency care (e.g., CPR, first aid, AIDS precautions)	0 1 2 3 4
143.	Hazardous conditions on the playground, in the classroom, and elsewhere in the school	0 1 2 3 4
144.	Liability issues pertinent to playground, classroom, and elsewhere in school (e.g., related to leaving students unattended)	0 1 2 3 4
		0 1 2 3 4

145. **Overall evaluation of the importance of Knowledge of Health?** .....

146. How well do the statements in section H cover the important aspects of Knowledge of Health?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

I. KNOWLEDGE OF VISUAL AND PERFORMING ARTS		IMPORTANCE
147.	Basic elements of music (e.g., melody, harmony, texture, timbre, form, rhythm)	0 1 2 3 4
148.	Genres of music (e.g., classical, jazz, popular)	0 1 2 3 4
149.	Various music media (e.g., voice, instrumental, recorded)	0 1 2 3 4
150.	Basic elements of visual arts (e.g., line, color, shape)	0 1 2 3 4
151.	Genres of visual arts (e.g., drawing, sculpture, photography)	0 1 2 3 4
152.	Various visual arts media (e.g., paint, clay, fabric, jewelry)	0 1 2 3 4
153.	Basic elements of dance	0 1 2 3 4
154.	Genres of dance (e.g., classical ballet, modern dance, folk dancing)	0 1 2 3 4

How important is it for a newly licensed (certified) elementary school teacher to know the following in order to perform his/her job in a competent manner?

(0) Not important
(1) Slightly important
(2) Moderately important
(3) Important
(4) Very important

I. KNOWLEDGE OF VISUAL AND PERFORMING ARTS (cont.)		IMPORTANCE
155.	Basic elements and components of drama (e.g., stage directions, affect, voice projection, body language)	0 1 2 3 4
156.	Genres of drama (e.g., musical, comedy)	0 1 2 3 4
157.	Elements common to the arts (e.g., repetition, contrast, imitation)	0 1 2 3 4
158.	The human need for expression through the arts	0 1 2 3 4
159.	The affective influence of a work of art on the viewer/ listener/perceiver	0 1 2 3 4
160.	Works of music, dance, drama, and the visual arts across cultures	0 1 2 3 4
161.	Works of music, dance, drama, and the visual arts from various periods of history	0 1 2 3 4
162.	**Overall evaluation of the importance of Knowledge of Visual and Performing Arts?**	0 1 2 3 4

163. How well do the statements in section I cover the important aspects of Knowledge of Visual and Performing Arts?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

PART III -- ADDITIONAL COMMENTS

Please use this space to list any important **KNOWLEDGE DOMAINS** that you believe were **NOT** included in this inventory. Also, use the space for any additional comments about the inventory itself.

PART IV -- RECOMMENDATIONS FOR TEST CONTENT

Listed below are nine content domains that may be covered on the new Education in the Elementary School examination. If the examination were to contain 100 questions, how many questions do you believe should be included from each content domain?

Please indicate your response using whole numbers (no fractions). If you believe a content domain should not be included in the examination, put a 0 in the space provided. Please make sure that your responses sum to 100.

CONTENT DOMAIN	NUMBER OF EXAM QUESTIONS (out of 100)
A. KNOWLEDGE OF ELEMENTARY SCHOOL STUDENTS	_____
B. KNOWLEDGE OF PROFESSIONAL ISSUES	_____
C. KNOWLEDGE OF READING, LANGUAGE ARTS, AND LITERATURE	_____
D. KNOWLEDGE OF MATHEMATICS	_____
E. KNOWLEDGE OF SOCIAL STUDIES	_____
F. KNOWLEDGE OF SCIENCE	_____
G. KNOWLEDGE OF PHYSICAL EDUCATION	_____
H. KNOWLEDGE OF HEALTH	_____
I. KNOWLEDGE OF VISUAL AND PERFORMING ARTS	_____
	TOTAL = 100

PART V - BACKGROUND INFORMATION

The information that you provide in this section is completely confidential and will be used for research purposes only. Please answer the questions by circling the number that most closely describes you or your professional activities. Unless otherwise indicated, please circle only one response for each question.

164. Where do you work?

1. Alabama
2. Alaska
3. Arizona
4. Arkansas
5. California
6. Colorado
7. Connecticut
8. Delaware
9. District of Columbia
10. Florida
11. Georgia
12. Hawaii
13. Idaho
14. Illinois
15. Indiana
16. Iowa
17. Kansas
18. Kentucky
19. Louisiana
20. Maine
21. Maryland
22. Massachusetts
23. Michigan
24. Minnesota
25. Mississippi
26. Missouri
27. Montana
28. Nebraska
29. Nevada
30. New Hampshire
31. New Jersey
32. New Mexico
33. New York
34. North Carolina
35. North Dakota
36. Ohio
37. Oklahoma
38. Oregon
39. Pennsylvania
40. Puerto Rico
41. Rhode Island
42. South Carolina
43. South Dakota
44. Tennessee
45. Texas
46. Utah
47. Vermont
48. Virginia
49. Washington
50. West Virginia
51. Wisconsin
52. Wyoming

165. Which of the following best describes the area in which you practice?

1. Urban
2. Suburban
3. Rural

166. What is your age?

1. Under 25
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65 and over

(THE SURVEY CONTINUES ON THE NEXT PAGE.)

167. What is your sex?

1. Female
2. Male

168. How do you describe yourself?

1. American Indian, Inuit, or Aleut
2. Asian, Asian American, or Pacific Islander
3. Black or African American
4. Mexican American or Chicano
5. Puerto Rican
6. Latin American, South American, Central American, or other Hispanic
7. White
8. Combination (please specify) _____
9. Other (please specify) _____

169. What is the highest professional degree you hold?

1. Less than a bachelor's
2. Bachelor's
3. Bachelor's + additional credits
4. Master's or equivalent
5. Master's + additional credits
6. Doctorate

170. Which of the following best describes your current employment status?

1. Temporary substitute (assigned on a daily basis)
2. Permanent substitute (assigned on a longer term basis)
3. Regular teacher (not a substitute)
4. Principal or assistant principal
5. School administrator
6. Curriculum supervisor
7. State administrator
8. College faculty
9. Other (please specify)_____

(THE SURVEY CONTINUES ON THE NEXT PAGE.)

171. Which of the following best describes the type of school in which you teach? (Circle ALL that apply.)

1. Elementary
2. Middle
3. Junior high
4. Senior high
5. Comprehensive secondary (7-12)
6. College/university
7. Do not currently teach -- administrator/supervisor
8. Do not currently teach -- retired
9. Other (please specify)_____

172. Which of the following areas best describes your primary teaching assignment? (Circle only ONE answer.)

1. All or most elementary school subjects
2. All or most middle school subjects
3. Special education for handicapped or other exceptional students, including the gifted and talented
4. Arts (e.g., visual arts, music, theater)
5. Language arts and communication (e.g., English, foreign language, speech, literature)
6. Mathematics and computer science (e.g., arithmetic, logic, statistics)
7. Physical and biological sciences (e.g., general science, biology, physics, chemistry, geology)
8. Social sciences (e.g., social studies, psychology, sociology, economics, history, government)
9. Home economics
10. Business and vocational education (e.g., accounting, shop, craft skills, agriculture)
11. Health and physical education
12. Curriculum and instruction
13. Counseling/educational psychology
14. Educational foundations
15. Do not currently teach -- administrator/supervisor
16. Do not currently teach -- retired
17. Other (please specify) _____

(THE SURVEY CONTINUES ON THE NEXT PAGE.)

173. What grade(s) are you currently teaching? (Circle ALL that apply.)

1. Preschool
2. Kindergarten
3. First
4. Second
5. Third
6. Fourth
7. Fifth
8. Sixth
9. Seventh
10. Eighth
11. Ninth
12. Tenth
13. Eleventh
14. Twelfth
15. Undergraduate
16. Graduate
17. Do not currently teach -- administrator/supervisor
18. Do not currently teach -- retired
19. Other (please specify) _____

174. How many years, including the current school year, have you taught?

1. Less than a year
2. 1 to 2 years
3. 3 to 5 years
4. 6 to 10 years
5. 11 to 15 years
6. 16 to 20 years
7. 21 or more years
8. Never taught

THANK YOU FOR PARTICIPATING IN THIS STUDY. PLEASE RETURN THE SURVEY WITHIN *10 DAYS* IN THE ENCLOSED ENVELOPE.

Appendix B

Cover Letter to Survey Participants

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08541

609-921 9000
ABLE EDUCTESTSVC

DIVISION OF COGNITIVE
AND ASSESSMENT RESEARCH

January, 1991

Dear Colleague:

I am writing to ask your cooperation in a study that should be of importance to teachers, college faculty, administrators, and other professionals in the field of education. As you are undoubtedly aware, the profession is receiving increasing national press as new plans and programs are proposed for assessing teaching. Our response to this call for improvements is to revamp the existing teacher assessment tests offered by Educational Testing Service.

One of the steps we're taking in this renovation project is to conduct a series of studies that looks closely at the knowledge and skills beginning teachers need in order to be licensed (certified). In some of our studies, we've asked respondents to share their judgments about important enabling skills (e.g., reading comprehension), tasks of teaching (e.g., lesson planning), and knowledge of general principles of teaching and learning that may be important for all beginning teachers to know, regardless of their grade level or subject matter. In this study, we're focusing on the knowledge needed by beginning elementary school teachers.

As part of the development process, ETS worked closely with teachers, college faculty, and school administrators to identify four potentially important knowledge areas for elementary school teachers: students, professional issues, subject matter, and pedagogy specific to a particular subject matter. Since the number of knowledge statements covered by these four knowledge areas was so large, we separated the statements into two inventories. Form 1 covers knowledge of students, knowledge of professional issues, and knowledge of subject matter. Form 2 covers knowledge of students, knowledge of professional issues, and knowledge of pedagogy specific to a particular subject matter. We've included only one form for you to complete.

Your opinion is very important. We are sampling only 1600 professionals, therefore the value of the survey results is directly related to the number of responses we get. Your responses are confidential. The inventory request for background information about you is solely for purposes of describing this study's respondents. The code number on the back of the inventory is for our record-keeping purposes.

A postage-paid envelope is enclosed for the return of your completed inventory. Please return the inventory within ten days. If you have any questions about the study or about your participation in it, feel free to call me collect at (609) 921-9000 Ext. 5795. Thank you for your time and participation in this important project.

Cordially,

Anne Reynolds

Anne Reynolds, Ph.D.
Associate Research Scientist

Enclosures (2)

Appendix C

Follow-up Postcard

JOB ANALYSIS INVENTORY OF EDUCATION IN THE ELEMENTARY SCHOOL

Dear Colleague:

I recently sent you an inventory to obtain your opinions of what a newly-licensed teacher should know and be able to do. If you have not already done so, please complete the inventory and return it in the postage-paid envelope to:

Educational Testing Service, 16-R
Princeton, NJ 08541

If you have already returned the inventory, please accept my thanks for your help in this important project.

Sincerely,

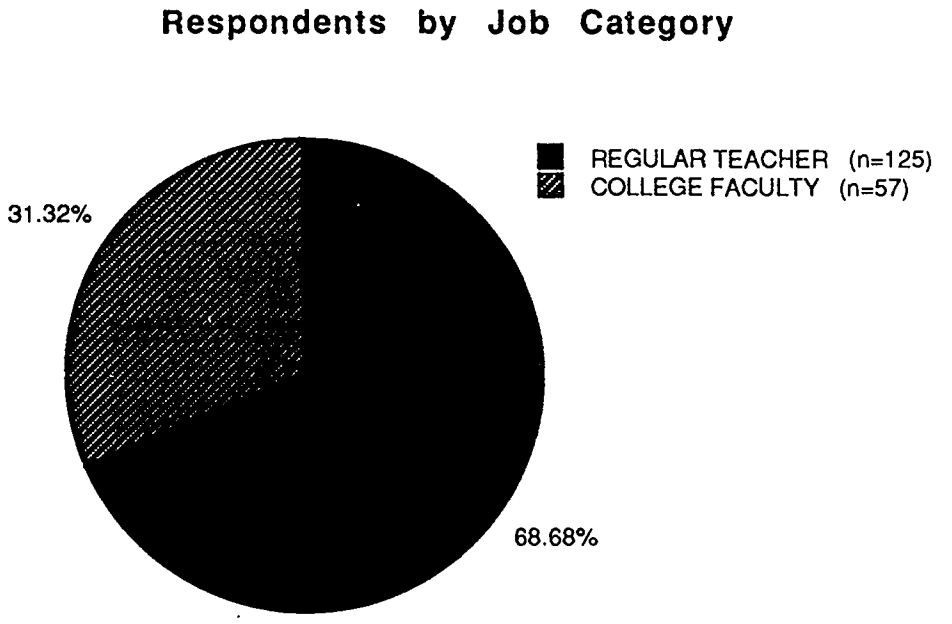
Anne Reynolds

Anne Reynolds, Ph.D.
Associate Research Scientist

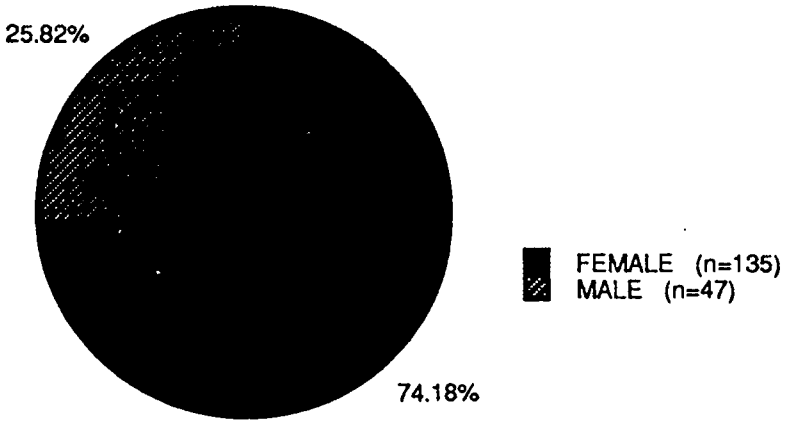
Appendix D

Demographic Characteristics of the Respondents

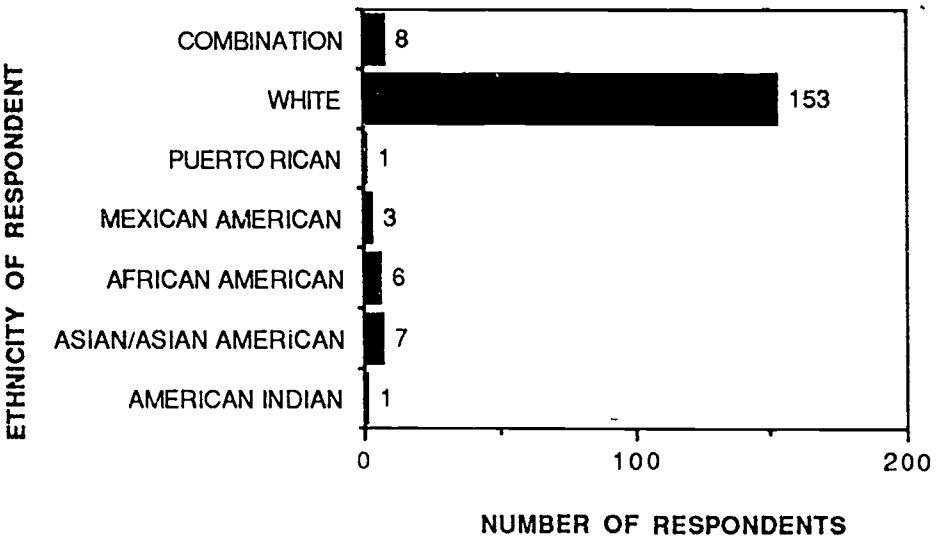
NOTE: Some totals sum to less than 182, the total number of surveys analyzed. On these particular background questions some respondents gave multiple responses and others gave no response. These two types of responses were omitted from the analyses.



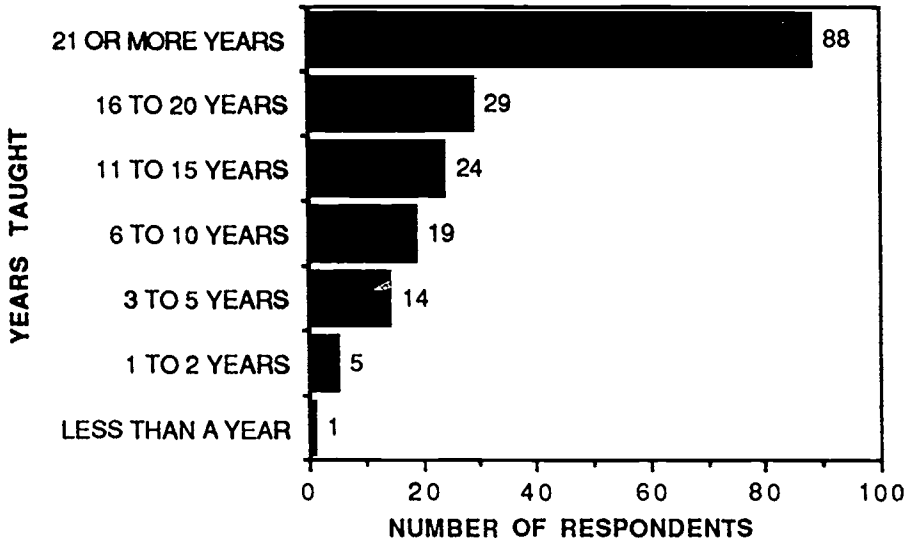
Respondents by Sex



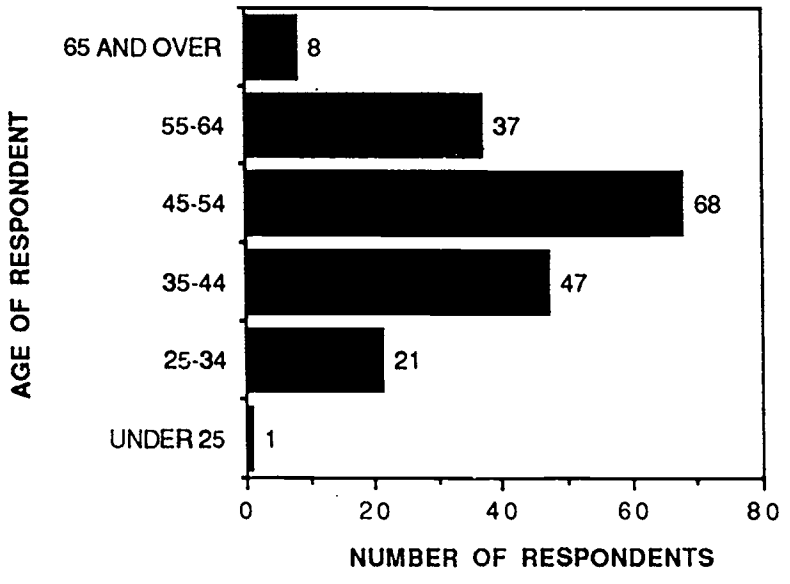
Respondents by Ethnicity



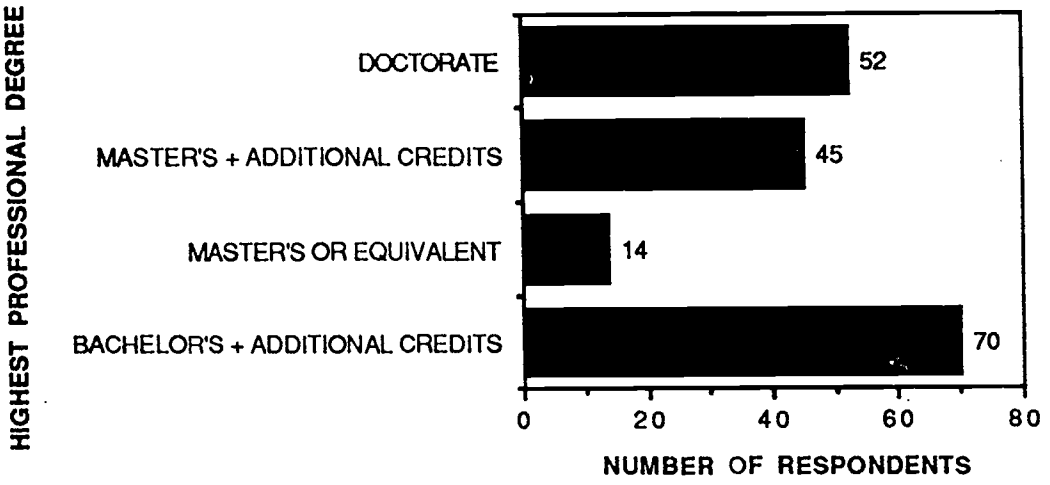
Respondents by Years of Teaching Experience



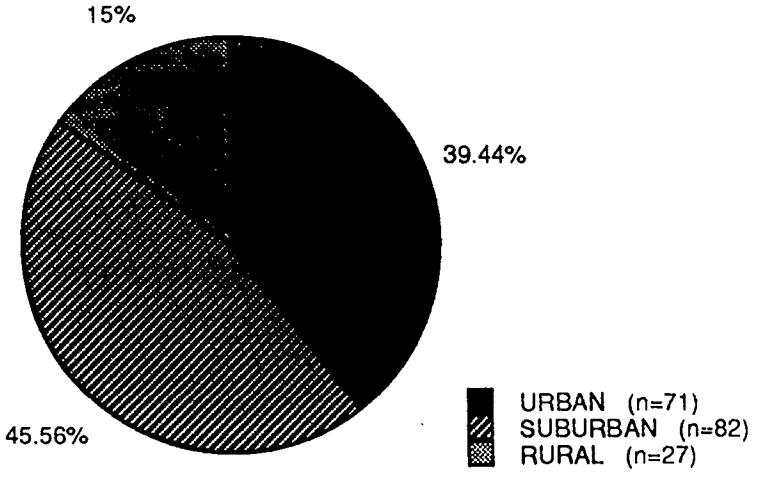
Respondents by Age



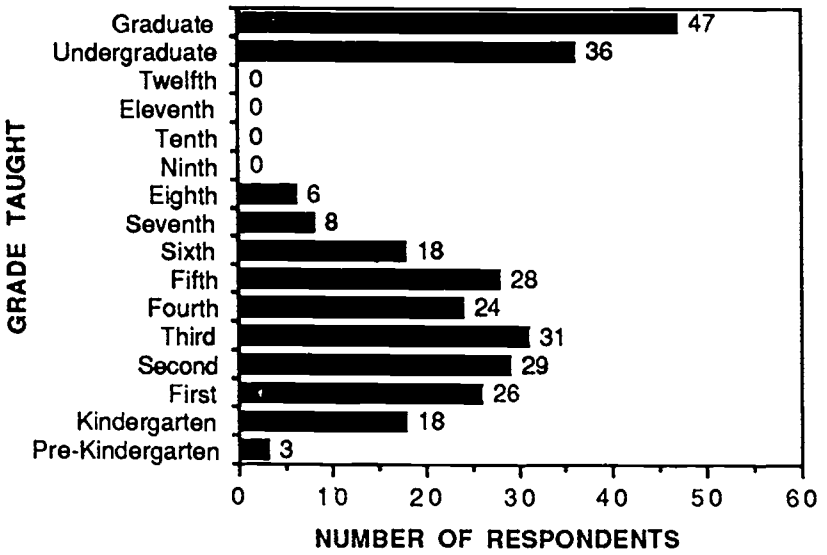
Respondents by Highest Degree Held



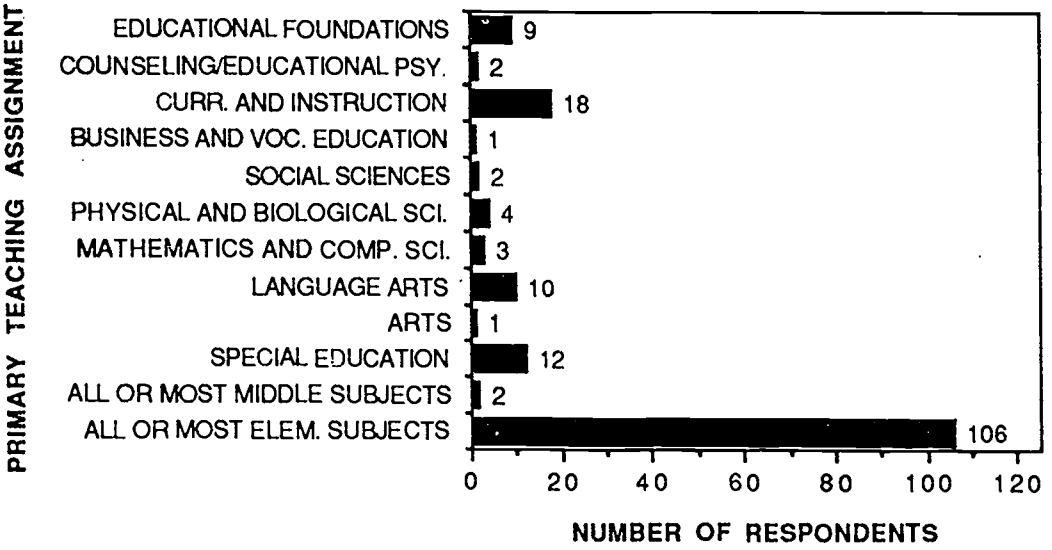
Respondents by School Location



Respondents by Grade Level Taught



Respondents by Primary Teaching Assignment



Appendix E

Means by Job Category

NOTE: This table includes respondents who considered themselves elementary school teachers (and those who teach elementary school and another school level) and teacher educators. Since the purpose of the study was to gather judgments from teachers and teacher educators, the respondent group does not include people who indicated that they were school administrators (e.g., curriculum supervisors, principals), state administators, temporary substitutes, or retirees.

* denotes content coverage questions for which a 5 point scale was used: 1=Very Poorly; 2=Poorly; 3=Adequately; 4=Well; 5=Very Well.

QUESTION		REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q1	biological factors	2.78	2.75
Q2	familial factors	2.95	3.23
Q3	nutritional/ hygienic factors	2.90	2.82
Q4	cultural factors	2.99	3.40
Q5	educational context	3.18	3.38
Q6	learning styles	3.65	3.23
Q7	cognitive development	3.02	3.56
Q8	physical development	3.22	3.11
Q9	affective development	3.58	3.53
Q10	social development	3.17	3.25
Q11	theories of language development	**2.10**	**2.45**
Q12	early language acquisition's affect on classroom language	2.68	3.04
Q13	stages of language acquisition and development	**2.49**	2.73
Q14	second language learning	2.63	3.05
Q15	principles of linguistics	**2.02**	**2.43**
Q16	*OVERALL IMPORTANCE OF KNOWLEDGE OF ELEMENTARY SCHOOL STUDENTS*	3.21	3.55
Q17*	**CONTENT COVERAGE OF ELEMENTARY SCHOOL STUDENTS**	3.98	4.00

	QUESTION	REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q18	major trends in curriculum theory	2.58	**2.34**
Q19	professional and scholarly organizations	**1.85**	**2.12**
Q20	professional and scholarly literature	**2.18**	2.51
Q21	the effects of teaching style on learning and teaching	3.62	3.61
Q22	variety of parent-school collaborations	3.22	3.05
Q23	*OVERALL IMPORTANCE OF KNOWLEDGE OF PROFESSIONAL ISSUES*	2.78	2.89
Q24*	**CONTENT COVERAGE OF PROFESSIONAL ISSUES**	3.73	3.61
Q25	conventions of language	3.64	3.55
Q26	language structure	3.40	3.25
Q27	word recognition strategies	3.57	3.47
Q28	text structure	3.53	3.69
Q29	comprehension strategies	3.10	3.25
Q30	language usage	3.27	3.27
Q31	library skills	3.07	3.00
Q32	study skills	3.33	3.44
Q33	children's literature	3.46	3.42
Q34	adult literature	**2.02**	**2.27**
Q35	functional literacy	2.84	2.96
Q36	graphic literacy	2.93	3.04
Q37	oral communication and presentation skills	3.42	3.38
Q38	creative dramatics	2.83	2.80
Q39	composing processes	3.48	3.44
Q40	types of writing	3.25	3.05
Q41	*OVERALL IMPORTANCE OF KNOWLEDGE OF READING, LANGUAGE ARTS, LITERATURE*	3.63	3.72
Q42*	**CONTENT COVERAGE OF READING, LANGUAGE ARTS, LITERATURE**	4.34	4.21

QUESTION		REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q43	prenumeration	3.37	3.58
Q44	numeration	3.50	3.47
Q45	number theory	3.03	3.22
Q46	patterns and functions	3.37	3.49
Q47	number sense	3.45	3.61
Q48	techniques for computational estimation	3.36	3.46
Q49	mental mathematics	3.27	3.21
Q50	calculator	2.97	3.14
Q51	computer	3.08	3.18
Q52	paper/pencil computation	3.33	3.30
Q53	whole numbers	3.45	3.72
Q54	rational numbers	3.31	3.60
Q55	percents	3.22	3.54
Q56	inequalities	2.96	3.18
Q57	integers	2.87	3.12
Q58	geometry and spatial sense	3.15	3.14
Q59	measurements	3.29	3.26
Q60	organizing and interpreting data in math	3.42	3.44
Q61	algebraic methods	2.71	2.84
Q62	statistics and probability	**2.42**	2.63
Q63	methods of using mathematics	3.59	3.75
Q64	methods of mathematical investigation	3.50	3.35
Q65	strategies for problem solving	3.58	3.67
Q66	historical, cultural, and ongoing development of math principles	**1.96**	**2.18**
Q67	*OVERALL IMPORTANCE OF KNOWLEDGE OF MATHEMATICS*	3.50	3.64
Q68*	CONTENT COVERAGE OF MATHEMATICS	4.38	4.20

	QUESTION	REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q69	methods of inquiry in social studies	3.37	3.49
Q70	interdependence of humans and physical environment	3.19	3.57
Q71	world cultures	3.06	3.30
Q72	national territories	2.89	2.88
Q73	chronology, sequence, change	2.94	3.21
Q74	major events and movements in u.s. history	3.21	3.21
Q75	major events and movements in global history	2.85	2.98
Q76	interregional relationships over time	**2.44**	2.98
Q77	nature and purpose of government	3.14	3.29
Q78	forms of government	2.98	3.14
Q79	traditional political institutions	**2.44**	2.76
Q80	united states constitution	3.28	3.39
Q81	rights and responsibilities of citizens	3.40	3.46
Q82	relations among nations	2.82	2.96
Q83	market as distribution and information system	**2.41**	2.70
Q84	individual and the market	**2.23**	2.66
Q85	effects of economic and historical forces on humans and nature	2.61	3.04
Q86	government and the market	**2.23**	2.54
Q87	economic systems	**2.49**	2.71
Q88	culture	3.03	3.48
Q89	world view	3.05	3.32
Q90	belief systems in various cultures	2.77	3.00
Q91	socialization and acculturation	2.70	3.07
Q92	political, social, and economic conditions of ethnic groups in the u.s.	2.77	3.07
Q93	cross-cultural phenomena	2.92	3.32
Q94	impact of cultural evolution on different civilizations	2.52	2.59
Q95	physical anthropology	**2.16**	**2.25**
Q96	logic	2.59	2.82
Q97	ethics	2.77	3.05
Q98	philosophical traditions in diverse cultures	**1.82**	**2.16**
Q99	*OVERALL IMPORTANCE OF KNOWLEDGE OF SOCIAL STUDIES*	3.04	3.40
Q100*	CONTENT COVERAGE OF SOCIAL STUDIES	4.09	4.04

QUESTION		REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q101	molecules, atoms, and chemical change	2.59	3.07
Q102	physical change	2.83	3.28
Q103	heat and temperature	3.00	3.23
Q104	sound	2.95	3.16
Q105	light	2.97	3.18
Q106	energy sources	3.12	3.40
Q107	transformation of energy	2.82	3.16
Q108	machines	2.81	2.89
Q109	magnetism and electricity	2.96	3.11
Q110	flight and space travel	2.99	3.02
Q111	surface features of the earth	3.07	3.32
Q112	air and weather	3.15	3.26
Q113	sun and planets	3.15	3.09
Q114	stars and the universe	3.02	2.95
Q115	history of the earth, solar system, and universe	2.81	2.56
Q116	origins of life	2.[illegible]	2.63
Q117	classification system	2.7[illegible]	2.75
Q118	human anatomy and physiology	2.87	3.11
Q119	relationships of structure and functions	2.60	2.98
Q120	reproduction and nurturing of the young	2.69	2.96
Q121	habitat and climate	2.95	2.93
Q122	food chains and interdependence	3.18	3.32
Q123	scientific processes and problem solving	3.24	3.65
Q124	methods of inquiry	3.35	3.70
Q125	unifying themes/concepts in science	2.83	3.35
Q126	impact of science and technology on society	3.11	3.39
Q127	ethics in science	2.45	3.23
Q128	*OVERALL IMPORTANCE OF KNOWLEDGE OF SCIENCE*	3.20	3.42
Q129*	CONTENT COVERAGE OF SCIENCE	4.23	4.20

QUESTION		REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q130	basic elements and components of physical education	3.31	2.95
Q131	progression of motor learning	3.18	2.84
Q132	*OVERALL IMPORTANCE OF KNOWLEDGE OF PHYSICAL EDUCATION*	3.17	2.58
Q133*	**CONTENT COVERAGE OF PHYSICAL EDUCATION**	3.60	3.29
Q134	effects of physical, emotional, and social health on learning	3.52	3.39
Q135	effects of environmental factors on health of individuals	2.98	3.07
Q136	basic scientific information about health content areas	3.20	3.26
Q137	basic information about personal care	3.46	3.49
Q138	characteristics of the healthy person	3.41	3.46
Q139	signs and symptoms of child abuse	3.72	3.55
Q140	health personnel	2.98	2.61
Q141	laws, policies, and procedures in schools regarding health matters	3.35	3.09
Q142	basic emergency care	3.45	3.40
Q143	hazardous conditions in school	3.47	3.35
Q144	liability issues pertinent to school	3.60	3.23
Q145	*OVERAL IMPORTANCE OF KNOWLEDGE OF HEALTH*	3.51	3.30
Q146*	**CONTENT COVERAGE OF HEALTH**	4.22	3.96

QUESTION		REGULAR TEACHER n=125	TEACHER EDUCATORS n=57
Q147	basic elements of music	**2.49**	2.84
Q148	genres of music	**2.11**	**2.40**
Q149	various music media	**2.35**	2.51
Q150	basic elements of visual arts	2.71	3.00
Q151	genres of visual arts	2.54	**2.47**
Q152	various visual arts media	2.58	2.63
Q153	basic elements of dance	**2.20**	**2.34**
Q154	genres of dance	**2.10**	**2.05**
Q155	basic elements and components of drama	**2.24**	**2.30**
Q156	genres of drama	**1.98**	**2.16**
Q157	elements common to the arts	**2.12**	**2.46**
Q158	human need for expression through the arts	2.75	2.96
Q159	affective influence of a work of art on the viewer, listener, perceiver	**2.32**	2.72
Q160	works of music, dance, drama, and the visual arts across cultures	**2.46**	2.79
Q161	works of music, dance, drama, and the visual arts, from various periods of history	**2.28**	**2.46**
Q162	*OVERALL IMPORTANCE OF KNOWLEDGE OF VISUAL AND PERFORMING ARTS*	2.55	2.73
Q163*	CONTENT COVERAGE OF VISUAL AND PERFORMING ARTS	4.03	4.09

Appendix F

Knowledge Statements Rated Less than 2.50 by Relevant Subgroups

NOTE: This table includes respondents who considered themselves elementary school teachers (and those who teach elementary school and another school level) and teacher educators. Since the purpose of the survey was to gather judgments from teachers and teacher educators, the respondent group does not include people who indicated that they were school administrators (e.g., curriculum supervisors, principals), state administrators, temporary substitutes, or retirees. Only subgroups which numbered 30 or more are included in this table.

T=Teacher (includes permanent substitutes); TED=Teacher Educator
F=Female; M=Male
0-10=0 to 10 years of teaching experience; 11+=11 or more years of teaching experience

QUESTION		RESPONDENTS BY JOB		RESPONDENTS BY SEX		TEACHERS BY YEARS OF TEACHING EXPERIENCE	
		T	TED	F	M	0-10	11+
		n=125	n=57	n=135	n=47	n=39	n=141
DOMAIN A: KNOWLEDGE OF ELEMENTARY STUDENTS							
11	theories of language development	2.10	2.45	2.25	2.11	1.76	2.25
12	early language acquisition's affect on classroom language					2.28	
13	stages of language acquisition and development	2.49				2.27	
14	second language learning					2.45	
15	principles of linguistics	2.02	2.43	2.21	1.98	1.88	2.07
DOMAIN B: KNOWLEDGE OF PROFESSIONAL ISSUES							
18	major trends in curriculum theory		2.34		2.41		
19	professional and scholarly organizations	1.85	2.12	1.90	2.05	1.61	1.94
20	professional and scholarly literature	2.18		2.25	2.39	2.00	2.25
DOMAIN C: KNOWLEDGE OF READING, LANGUAGE ARTS, AND LITERATURE							
34	adult literature	2.02	2.27	2.12	2.02	1.57	2.20

QUESTION		RESPONDENTS BY JOB		RESPON-DENTS BY SEX		TEACHERS BY YEARS OF TEACHING EXPERIENCE	
		T	TED	F	M	0-10	11+
		n=125	n=57	n=135	n=47	n=39	n=141
DOMAIN D: KNOWLEDGE OF MATHEMATICS							
62	statistics and probability	2.42		2.47		2.33	2.48
66	historical, cultural, and ongoing development of math principles	1.96	2.18	2.01	2.06	1.78	2.03
DOMAIN E: KNOWLEDGE OF SOCIAL STUDIES							
76	interregional relationships over time	2.44				2.29	
79	traditional political institutions	2.44				2.28	
83	market as distribution and information system	2.41				2.03	
84	individual and the market	2.23		2.36	2.39	1.91	2.37
85	effects of economic and historical forces on humans and nature					2.40	
86	government and the market	2.23		2.24		1.89	2.39
87	economic systems	2.49				2.14	
90	belief systems in various cultures					2.49	
91	socialization and acculturation					2.49	
94	impact of cultural evolution on different civilizations					2.06	
95	physical anthropology	2.16	2.25	2.11	2.40	1.77	2.33
96	logic					2.23	
97	ethics					2.46	
98	philosophical traditions in diverse cultures	1.82	2.16	1.84	2.17	1.34	2.02

QUESTION		RESPONDENTS BY JOB		RESPON-DENTS BY SEX		TEACHERS BY YEARS OF TEACHING EXPERIENCE	
		T	TED	F	M	0-10	11+
		n=125	n=57	n=135	n=47	n=39	n=141
DOMAIN F: KNOWLEDGE OF SCIENCE							
116	origins of life			2.48		2.39	
120	reproduction and nurturing of the young					2.39	
127	ethics in science	2.45				2.17	
DOMAIN I: KNOWLEDGE OF VISUAL AND PERFORMING ARTS							
147	basic elements of music	2.49				2.20	
148	genres of music	2.11	2.40	2.17	2.30	1.77	2.27
149	various music media	2.35		2.40	2.40	2.03	
150	basic elements of visual arts					2.46	
151	genres of visual arts		2.47		2.43	2.40	
152	various visual arts media					2.29	
153	basic elements of dance	2.20	2.34	2.30	2.09	1.86	2.37
154	genres of dance	2.10	2.05	2.15	1.89	1.86	2.22
155	basic elements and components of drama	2.24	2.30	2.23	2.34	2.14	2.31
156	genres of drama	1.98	2.16	2.03	2.06	1.89	2.05
157	elements common to the arts	2.12	2.46	2.21	2.28	2.06	2.15
159	affective influence of a work of art on the viewer, listener, perceiver	2.32		2.42		2.11	2.40
160	works of music, dance, drama, and the visual arts across cultures	2.46				2.20	
161	works of music, dance, drama, and the visual arts, from various periods of history	2.28	2.46	2.35	2.30	2.06	2.38